

Atty. Dkt. No. SALK2370-2
(088802-5455)

Remarks

Courtesies extended to Applicants' representative during the telephone interviews held February 8, 2006, and March 9, 2006, are acknowledged with appreciation.

As discussed during the telephone interviews, the present invention provides a crystalline chalcone synthase and methods for crystallizing chalcone synthase and defined mutants thereof. It is Applicants' understanding, based on the recent telephonic discussions with the Examiner, that in cases where a protein was known, for example by sequence available to the public, prior to the invention date, the Examiner would favorably consider claims contemplating a crystalline form of the protein if a specific SEQ ID NO. defining the protein were to be recited in the claim. This requirement for the recitation of a specific SEQ ID NO. to define the protein being crystallized has been incorporated into the independent claims, i.e., Claims 17 and 40, by the present communication.

By the present communication, the specification has been amended throughout to ensure compliance with the sequence rules (37 C.F.R. §§ 1.821-1.825) as required by the Examiner (Office Action mailed November 15, 2005, page 3, lines 9-10.) Thus, the specification has been amended to recite amino acid identification numbers for the individual residues recited in Table 1, support for which is found in the specification at, for example, Table 2 (SEQ ID NO:1), page 12, lines 14-21. Additionally, the specification has been amended to provide SEQ ID NOs: for amino acid residues recited at pages 178-180, 185, and 192. Furthermore, specific SEQ ID NOs. corresponding to the sequence information included in Tables 3, and 5-8 will be provided in conjunction with submission of an updated Sequence Listing (to be provided under separate cover in due course). Finally, a typographical error in the specification at page 192, line 3, i.e., "923 Å³" is corrected by the present communication. The unit of the comparison, i.e., volume expressed as Å³, is clear by the context and examples of the sentence, and one of ordinary skill in the art would immediately recognize the typographical error and appropriate correction, i.e., the replacement of Å³ for Å.

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By the present communication, Claims 17, 23 and 26 have been amended, and claims 40-56 have been added, to define Applicants' invention with greater particularity. No new matter is introduced by the subject amendments as the amended claim language is fully supported by the specification and original claims. In addition, Claims 1-16, 18-22, 24-25, and 27-39 have been canceled without prejudice.

New Claim 40 provides a method for crystallizing chalcone synthase having SEQ ID NO:1 or mutant thereof, wherein the mutant comprises one of several defined mutations (support for which is found in the specification at, for example, page 175, lines 6-7, and 14-21.) The specification discloses that the C₁₆₄S mutant of SEQ ID NO:1 recited in Claim 40 was crystallized (see page 175, line 14.) Applicants submit that the other mutations recited in Claim 40, i.e., mutations C₁₆₄D, H₃₀₃A, H₃₀₃Q, H₃₀₃D, H₃₀₃T, N₃₃₆A, N₃₃₆D, N₃₃₆Q, N₃₃₆H, F₂₁₅S, F₂₁₅Y, and F₂₁₅W of SEQ ID NO:1, had not been previously known to the public and therefore constitute new proteins. Based on the telephone interviews discussed above, Applicants submit that it would be improper to require crystallization of mutants bearing these latter mutations, being previously unknown to the public, as a condition for allowance.

New Claim 41, dependent upon Claim 40, is directed to the inclusion of DTT during crystallization, support for which is found in the specification at, for example, page 175, lines 17. New Claim 42 is directed to the crystal resulting from the method of Claim 40, upon which Claim 42 depends. New Claims 43-56 are directed to sub-embodiments of Claim 42 upon which they depend.

Upon entry of the amendments submitted herewith, Claims 17, 23, 26, and 40-56 will be pending. The present status of all claims in the application, and current amendments thereto, is provided in the Listing of Claims presented herein beginning on page 7.

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Rejection under 35 U.S.C. § 112, first paragraph: Claims 17 and 22-26

The rejection of Claims 17 and 22-26 under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, is respectfully traversed. Initially, the rejection as to Claims 22, and 24-25 is rendered moot by the cancellation thereof by the present communication. Claim 17, as amended, expressly recites the crystal parameters of crystalline chalcone synthase having SEQ ID NO:1, support for which is found in the specification at, for example, page 148, lines 10-18. Based on the telephone interviews referred to above, it is Applicants' understanding that this amendment to Claim 17 should put Claim 17 in condition for allowance. Because Claims 22 and 26, as amended, depend from Claim 17, Applicants submit that these claims should similarly be allowable. Accordingly, reconsideration and withdrawal of the current rejection are requested.

Rejection under 35 U.S.C. § 112, second paragraph: Claims 6, 17, 22, and 26

The rejection of Claims 6, 17, 22, and 26 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite is respectfully traversed. Initially, the rejection as to Claim 6 is rendered moot by the cancellation thereof by the present communication. For the reasons stated above, Claim 17, and dependent Claims 22 and 26, as amended, now particularly point out and distinctly claim the subject matter therein. Accordingly, reconsideration and withdrawal of the current rejection is requested.

Rejections under 35 U.S.C. § 102(a): Claim 6

The rejections of Claim 6 under 35 U.S.C. § 102(a) as allegedly being anticipated by Protein Data Bank Accession number 1BI5 and as allegedly being anticipated by Jungmans (*Plant Mol. Biol.* 22:239-253, 1993) are rendered moot by the cancellation of Claim 6 by the present communication.

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Conclusion

In view of the above amendments and remarks, reconsideration and favorable action on all claims are respectfully requested. In the event any matters remain to be resolved in view of this communication, the Examiner is invited to contact the undersigned at the telephone number given below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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By 

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